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ABSTRACT

The reliability, validity, and utility of various measures of career development as they are used with postsecondary deaf students were investigated. Career development was defined as the students' knowledge about various career areas, and secondly, the quality of the students' present career decision. Four commercially available measures of career development (modified for use with the deaf), a career knowledge test developed at the National Technical Institute for the Deaf (NTID), and a structured interview technique were used. The results indicated that scores on the commercially available tests as well as the NTID career knowledge test were moderately related to students' career knowledge. However, the NTID career knowledge test was more useful because it represented information about the specific careers which are included in NTID programs. Only the scores of the structured interview ratings were significantly related to the "goodness" of the students' career decision. A "good" career decision was defined as being carefully thought through, aware of the basic elements of the decision making process, realistic, and consistent with stated values. The results of this study suggest that the commercially available tests were not as useful as structured interviews and locally developed tests in assessing the knowledge and quality of deaf students' career decisions. The development of such measures, however, is costly. (Author/CTM)

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Measuring Career Development Among Postsecondary Deaf Students

Paper Series No. 25

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Nancy L. Slusher

May, 1978

NTID's principle goal in doing research is to influence the education, training and career placement of deaf citizens through systematic examination of issues related to deafness. As one part of NTID's total research effort, the Department of Research and Development conducts descriptive and experimental research. Research findings are used in the development of programs and materials in the areas of learning and instruction, personal and social growth, and career development of deaf students. This document was developed in the course of an agreement with the U.S. Department of Health, Education and Welfare.

MEASURING CAREER DEVELOPMENT AMONG POSTSECONDARY DEAF STUDENTS

Karl R. White
Nancy L. Slusher

ABSTRACT

The reliability, validity, and utility of various measures of career development as they are used with postsecondary deaf students were investigated. For purposes of this study, career development was defined as the students' knowledge about various career areas, and secondly, the quality of the students' present career decision. Four commercially available measures of career development (after modifications by the authors for use with the deaf), a career knowledge test developed at NTID, and a structured interview technique were considered. The results indicate that scores on the commercially available tests as well as the NTID career knowledge test are moderately related to students' career knowledge. However, the results of the NTID career knowledge test are more useful because they represent information about the specific careers which are included in NTID programs. Only the scores of the structured interview ratings are significantly related to the goodness of the students' career decision. The results of the study demonstrate that it is possible to obtain quality information about the career development of postsecondary deaf students. However, obtaining such information is costly in terms of time and effort.

Measuring Career Development Among Postsecondary Deaf Students

During the last decade, all levels and segments of the educational community have placed increasing emphasis on the concept of career education (Bell and Hoyt, 1974; USOE, 1975; and Hoyt, 1975). Career education funding, programs, curricula, and research have increased dramatically. As an illustration, ERIC's Research in Education Index lists 62 entries in the area of Career Education and Guidance in 1968 and more than 1000 references in 1976.

Educators of the deaf are also concerned about the concept of career education. Research by Schein and Delk (1974) reports a disproportionally high number of deaf Americans to be among those who are chronically underemployed, lack adequate training and education, or suffer from insufficient employment opportunities (see also Williams and Sussman, 1971; and Stahler, 1969). Therefore, it is not surprising that educators of the deaf are increasing their emphasis on career education and program development as a framework around which a total educational program should be organized (Bishop and Clarcq, 1977).

As work in career education among deaf student populations continues, issues of measurement become more and more critical. The quality of most decisions about career education programs with regard to diagnosis of need, class placement, individual counseling, and the effectiveness of existing or competing programs, all depend on the availability of reliable, valid, and useful assessment techniques. Although a variety of career development assessment measures have been published, information about the usefulness and psychometric properties of such measures

comes almost completely from populations of hearing students. The purpose of this paper is to examine the reliability, validity and utility of four widely used commercially available tests of career development for use with hearing impaired students. In addition, two alternative strategies for assessing the career development of hearing impaired students are described and examined.

Procedures

Before commencing their technical and academic education at the National Technical Institute for the Deaf (NTID), all entering NTID students attend a six week orientation program during the summer. One of the main objectives of this program is to provide students with activities and information which will enable them to make better career decisions. At the beginning of the summer program, students are randomly assigned to groups consisting of 12-13 students each. These groups are used to facilitate scheduling throughout the summer.

Groups of students were assigned by the scheduling office to participate in this study at the conclusion of the summer program. One hundred students (8 groups) were selected to complete one of four commercially available measures of career development. Seventy-nine students completed a test of career knowledge constructed at NTID. Thirty of the students participated in a structured interview assessing the quality of their career decision. Except for the interviews, students were scheduled to participate in the study by groups depending on their existing schedule. An attempt was made to overlap the students completing the commercially developed measures with the test developed at NTID and the structured interview. The final testing configuration and the overlap among the

different tests is pictured in Figure 1. In the remainder of the procedures section, the various measures used in the study will be more fully described.

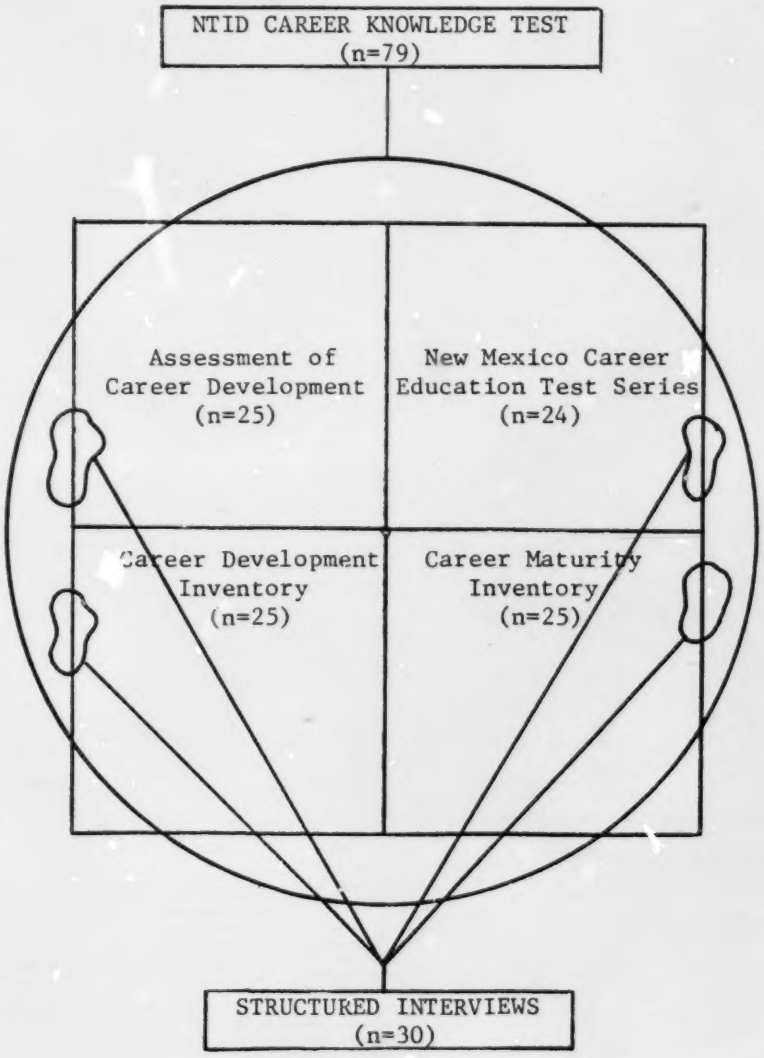

Figure 1. Testing configuration for the administration of various measures of career development.

Commercially Available Tests of Career Development

At the conclusion of the summer program, approximately 25 students completed a modified version of each of the four commercially available measures of career development. Each of these measures was a paper and pencil test which could be completed in a group testing situation. As noted in Figure 1, the four tests included:

1) Assessment of Career Development, available from the American College Testing Program

2) New Mexico Career Education Test Series, available from the Monitor Company

3) Career Development Inventory, available from Columbia University

4) Career Maturity Inventory, available from CTB/McGraw Hill

Each of these tests were modified in two basic ways. First, the language and format of test items were simplified to make the items more understandable for deaf students (e.g. difficult vocabulary words were changed whenever possible, complex syntax was simplified, test answers were recorded directly on the test instead of on separate answer sheets, etc.). Secondly, items or subtests were selected by the authors according to the following general criteria:

1) From each test, items were included which seemed to be the best measure of two basic constructs: a) the students' knowledge about the characteristics of various occupational areas; and, b) the "goodness" of the students'

career decision.[1] The reason for the second construct needs further clarification. None of the four published tests claim to directly measure how good a decision the student is making. Each of them, however, claim to measure constructs which are strongly related to the quality of career decisions. Since some assessment of how good a decision the student is making is important in most decisions about diagnosis and placement, individual counseling, and research and program evaluation; tests such as these are often used as the best available indicator. Consequently, it is important to know how useful the tests are in such an application.

2) Items and subtests were selected so that any one of the total tests could be administered to a group of 25 students in less than 90 minutes.

3) Within the limits created by the previous two conditions, an attempt was made to select those items which were most relevant to the types of careers for which students prepare at NTID; or which sizable numbers of profoundly deaf people typically consider.

As given to the NTID Students, the New Mexico Career Education Test Series, the Careeer Development Inventory and the Assessment of Career Development each consisted of two subtests. The first subtest assessed the students' occupational and career related knowledge, the second asked the student to report the extent of prior career exploratory and planning experiences. Three subtests of the Career Maturity Inventory were used, all of which measured different components of occupational and career-related knowledge. Sample items from each of the tests are included in Appendix A. Each of the tests were scored using the publisher's key for correct answers for those items which were included for

[1] Throughout this paper the term "good" career decision refers to a decision which is carefully thought through, considers the basic elements of a decision making process, is realistic, and is consistent with stated values. A "good" decision should not imply a best or "most correct" decision. A student could choose a variety of career areas which represent good decisions, while no one area is necessarily better or more correct than any of the others.

this study. The results from each of the tests were submitted to a traditional item analysis computer program (Nelson, 1974). Based on the results of the item analysis, about 10% of the items from each test were excluded from the final analysis. Items excluded were those which had very low (.10) or negative point biserial correlations of item to total subtest score. This was done in order to exclude those test items which seemed to be most ambiguous or confusing for deaf students.

NTID Career Knowledge Test

In addition to the commercially available measures of career development, a test was developed by the authors to measure students' occupational and career-related knowledge of those specific career areas for which most students prepare at NTID. Items on this test were similar in nature to the types of items included on the "knowledge" portions of the other four tests. The main difference was that each of the items focused directly on career areas for which students can prepare at NTID. Samples of these items are also included in Appendix A. This NTID test was administered to 79 randomly selected students at the conclusion of the summer program. As pictured in Figure 1, most of these students overlapped the students who had completed one of the commercially available tests.

Structured Interviews

A second additional measure used in the study was a 10-15 minute structured interview which was constructed to assess the "goodness" of

the student's present career decision.[2] The interview was conducted by 4 NTID Career Counselors with 30 randomly selected students at the conclusion of the summer program. During the interview, counselors discussed the student's knowledge of career information in his or her field of preference and in other career areas; the student's knowledge of his or her own skills, interests, and values; his or her basis for interest in that career area as opposed to other career areas; plans the student had for reaching his or her career goal; and, the influence of other people on his or her decisions. Each of the interviews was audiotaped (using a reverse interpreter behind a one way mirror), edited to eliminate irrelevant and duplicative information, and then typed.

Using the typed transcripts of these interviews, counselors who had not participated in the interviewing process rated the overall "goodness" of each student's career decision on the following scale.

4 = This student is making a reasonably good career decision. The student does not have a significant need for additional information or experience in order to make an appropriate initial career decision.

3 = This student is making a fair career decision. The student would benefit from additional instruction and experience before making a career decision, but there are no critical weaknesses.

2 = This student is making a moderately poor career decision. His or her decision making process suffers from major weaknesses and deficiencies.

1 = This student is making a very poor career decision. His or her decision making process suffers from numerous major weaknesses and deficiencies.

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[2] A complete report describing the procedures and results of this interviewing process in more detail is found in White, 1978.

Ratings of Professional Counselors

One final set of information was collected for each of the students who had completed one or more of the measures referred to previously. During the six week summer program, each of the students participated in a Career Planning Seminar. Each seminar consisted of 12 or 13 students and a professionally trained career counselor. The groups met approximately three hours each week to discuss the different components of career decision making. At the end of the six weeks, the career counselor who acted as the group leader for the groups that had students participating in the study was asked to rate each of the students in their group on the following two items:

With regard to making CAREER DECISIONS:

1) This student has made a _____ CHOICE of what to do in the fall.

_____ 1) very weak
_____ 2) moderately weak
_____ 2) moderately good
_____ 4) very good

2) This student KNOWS _____ about the career options which are available for him/her.

_____ 1) almost nothing
_____ 2) a little bit
_____ 3) quite a bit
_____ 4) a lot

This information was used as a criteria by which to make initial judgments about the validity of the various tests (i.e. are the tests measuring what we think they are measuring?) The rationale for using the professional judgment of trained counselors for such a criteria is discussed further in the results and discussion section.

Results and Discussion

The intent of this study was to examine the reliability, validity and utility of various techniques in assessing the level of career development among postsecondary deaf students. The simplicity of those three words -- reliability, validity and utility -- can be misleading. First, it must be remembered that there are different kinds of reliability and validity. In addition, what is useful in one situation may not be useful for a different purpose in a different situation. Furthermore, the terms are intertwined and almost hierarchical -- a test which is not reliable cannot be valid; and, in most cases, an unreliable and invalid test would not be very useful. In the remainder of this section, these three characteristics of the various tests will be considered.

Reliability

As can be seen in Table 1, all but one of the subtests and each of the total tests have reasonably high measures of internal consistency. Although a complete examination of an instrument's reliability should include some measure of stability over time, scheduling considerations prevented this from being included in this study. However, measures of internal consistency are the most widely used estimate of reliability with cognitive measures. It is generally accepted that that the internal consistency of such a test, represents an estimate of the lower bound of the test-retest reliability. Since the test items are generally of a cognitive nature and since the measures of internal consistency in this administration are moderately high, it is reasonable to conclude that each of the five paper and pencil tests is a fairly reliable measure.

In addition to the five paper and pencil tests, the previously described structured interviews were conducted with a subset of the

Table 1

Measures of Internal Consistency of Five Measures of Career Development

Test		No. of Items	Hoyt Measure of Internal Consistency[a]
Assessment of Career Development			
Subtest 1	Occupational and Career Knowledge	54	.82
Subtest 2	Prior Exploratory and Planning Experiences	27	.84
	Total Test	81	.86
New Mexico Career Education Scores			
Subtest 1	Occupational and Career Knowledge	31	.77
Subtest 2	Prior Exploratory and Planning Experiences	24	.49
	Total Test	55	.74
Career Development Inventory			
Subtest 1	Occupational and Career Knowledge	29	.80
Subtest 2	Prior Exploratory and Planning Experiences	22	.84
	Total Test	51	.84
Career Maturity Inventory			
Subtest 1	Self Appraisal	18	.71
Subtest 2	Choosing a Job	19	.74
Subtest 3	Problem Solving	17	.74
	Total Test	54	.87
NTID Career Knowledge Test			
	Total Test	74	.86

[a] Hoyt's measure of internal consistency is computed by an analysis of variance approach. It is equivalent to a KR_{20} measure of internal consistency (Magnusson, 1966).

students as another source of information about the level of career development among this population of deaf students. The rating procedure was planned so that each interview transcript would be rated by three or more different career counselors. The average of all counselors' ratings on any single interview was used in the anlysis as the best estimate for that interview. Due to scheduling and logistical problems a number of interviews were rated by only 1 or 2 people. Two other interviews were interrupted and had to be discontinued during the interviewing process, resulting in incomplete information. In both instances, the interviews were dropped from the final analysis. The average number of people who rated each of the remaining interviews was 4.3.

Two important aspects of reliability in using such an assessment technique are the consistency with which different judges rate the same interview (interjudge reliability) and the consistency with which the same judge rates the same interview at different times (intrajudge reliability). Both interjudge ratings and intrajudge ratings were in agreement 80-85% of the time. That level of agreement is high enough to feel consistently comfortable with those aspects of the technique's reliability.

Validity

The reliability of the tests is a necessary but not sufficient condition for the much more critical issue of the tests' validity -- Are the tests measuring what we think they are? In the technical manuals for each of the four commercially available tests, the issue of validity is treated in extensive but fairly shallow sections. In each case, the main evidence for validity focuses on the content of the test -- i.e.,

from a logical analysis of the test items, one can conclude that the test items adequately sample the domain of relevant theoretical areas. The four commercially available tests claim as additional evidence for validity the fact that the scores for each of the tests increase with age.

The much more important, but difficult to measure characteristic of criterion-related and construct validity are not adequately treated at the present time in the technical manuals for any of these tests. One way to begin to examine the criterion-related and construct validity of these tests as well as the other measures used in the study is to examine how the test scores correlate with trained professional judgment.

The ratings of NTID career counselors about students' knowledge of career information and the goodness of students' career decision are a good beginning point for such an examination. Even though the ratings are very simple, they do represent the considered judgment of professional people who had had extensive contact with each of the students on a small group and individual basis exploring and discussing the students' career development and decision making process. Since other work at NTID has shown that different career counselors show very high interjudge agreement in assessing the level of career development among various students (White, 1978), the ratings by the counselors are a good beginning to judge whether the tests are really measuring what we think they are measuring. Information about the correlation of career counselors' ratings with each of the tests' scores used in the study is contained in Table 2. As can be seen in Table 2, those sections of the paper and pencil tests which focus on career knowledge correlate to some degree

Table 2

Correlations of Various Measures of Career Development with Career Counselor Ratings of Career Knowledge and Goodness of Career Decision

	Counselor Ratings	
Assessment of Career Development (n=25)	Career Knowledge	Goodness of Decision
Occupational/Career Knowledge	.326*	.324*
Exploratory/Planning Experiences	-.043	-.068
Total Test	.210	.206
New Mexico Career Education Test Scores (n=24)		
Occupational/Career Knowledge	.239	.033
Exploratory/Planning Experiences	-.114	-.296
Total Test	.128	-.119
Career Development Inventory (n=23)		
Occupational/Career Knowledge	.528**	.115
Exploratory/Planning Experiences	.174	.036
Total Test	.380*	.081
Career Maturity Inventory (n=25)		
Self Appraisal	.602**	.195
Choosing a Job	.470**	-.022
Problem Solving	.580**	.017
Total Test	.652**	.077
NTID Career Knowledge Test (n=60)		
Total Test	.510**	.348**
Structured Interviews (n=19)	.305	.568**

* = significant at .10 level
** = significant at .05 level

with the external criterion which estimated the level of career knowledge for each student. In particular, the occupational/career knowledge subtests of two of the commercially available measures (CDI and CMI) as well as the NTID Career Knowledge Test are moderately strong predictors of the students' level of career knowledge.

However, none of the commercially available paper and pencil tests are even moderately correlated with the quality of students' career decisions. The correlation of the NTID Career Knowledge Test with the goodness of career decision criteria is highly significant in a statistical sense, but fairly weak in a practical sense. On the other hand, there is a moderately strong correlation between the ratings of the structured interviews and the quality of students' career decisions.

In summary, these results indicate that most of the paper and pencil tests are moderately predictive (i.e. display predictive or criterion related validity) of the level of career knowledge which the student possesses. However, only the structured interview, and to a much lesser degree, the NTID paper and pencil test appear to be valid for assessing the quality of the students' career decisions.

Utility

The utility of any assessment tool depends to a large degree on the context in which it is to be used. For the purpose of this study, the usefulness of the various assessment techniques are examined from the perspective of how well the various measures assess:

1) the extent of accurate occupational and career related knowledge which deaf post-secondary students possess

2) the quality of career decisions which deaf post secondary students are making.

The study focuses on these questions because they are central to the use of measurement in career education for making decisions about: 1) diagnosis and class placement; 2) individual counseling; and, 3) research and evaluation about the value of alternative or competing educational programs. Of course, there are other uses for each of these tests which are not considered in this study.

Utility in measuring students' knowledge of career and occupational information. Those tests which were not at least moderately correlated with the criteria of how much career-related knowledge the student possessed would not be very useful in any of the applications referred to above. Using this validity coefficient as a first step, it can be seen that two of the commercially available measures (CDI and CMI) and the NTID Career Knowledge Test are moderately useful in predicting the extensiveness of students' occupational and career related knowledge.

A second variable that is important in assessing the usefulness of any of the measures in assessing students' level of career knowledge is the amount of time required for preparation and data collection. Obviously, it is a time consuming task to develop, field test and refine a measure of career knowledge such as the NTID Career Knowledge Test. Even the modification of commercially available measures so that they would be more appropriate for a post secondary deaf population is a fairly time consuming task. Such factors must be considered in judging the utility of any measure. Generally, the more time and effort which is required, the less practical or useful the measure becomes for many situations.

Finally, the nature of the test items are an important variable in judging the usefulness of the various measures. Those tests which were commercially developed assess students' knowledge about a very broad range of career and occupational areas. The majority of these items relate to jobs which very few profoundly deaf people have ever entered. In addition, training for such a broad range of jobs was not available at NTID and would probably not be available at any single school for the deaf. Even though students' scores on such a test correlate moderately strong with students' knowledge of careers and occupations in more specific areas, the information provided by such items is not very useful for most of the applications referred to previously.

For example, a commercially available test which covers a very broad area of careers might be used to assess the impact of a career awareness and career exploration program at a school such as NTID. It would be logical if such a program focused its instruction and information on those career areas for which NTID provides training. A pre-post administration of such a test may not reveal true differences between the two administrations because too many of the items are referring to areas in which no instruction is provided. Parallel examples can easily be seen for applications in screening and diagnosis, or individual counseling.

The more that the measurement tool focuses on the career areas which are of primary interest, the more useful it is likely to be. Consequently a self-developed measure, although it will be time consuming to develop and refine, will frequently be the most useful measure of career knowledge among post secondary deaf students.

Utility in measuring the quality of students' career decisions. Assessing the quality of students' career decisions is a difficult task. As mentioned earlier, none of the commercially available measures claim to be a direct assessment of this construct. Yet each of them claim to measure constructs which are closely related or necessary prerequisites for a good career decision. In the absence of other measures, such instruments are often used as an assessment of the goodness of students' career decisions. Yet, as evidenced in Table 2, the commercially available tests are correlated weakly or not at all with the criterion for goodness of career decision. Furthermore, even though the NTID Career Knowledge Test correlates highly with the criterion in a statistically significant sense, it is only weakly to moderately correlated in a practical sense. These data suggest that paper and pencil instruments (whether published or self-developed) are not particularly useful assessments of such a complex variable as goodness of career decision.

Ratings of the structured interview, however, correlate moderately well with the quality of students' career decisions. This interview approach provides the flexibility and opportunity for probing and clarification that results in a fairly valid and useful assessment of the goodness of a student's career decisions. In addition, the ratings display satisfactory interjudge and intrajudge reliability. Since this was a first effort with such an assessment technique, it is probable that further refinements can be made which will result in even better measurement.

The technique is not without its serious drawbacks however. Since

the interviews must be conducted individually, they are very time consuming. The logistics of audio taping and rating the interviews requires additional time. Obviously it is not the type of assessment that would be done with large numbers of students unless it were very important to have that information -- the benefits derived from such an assessment would have to outweigh the rather high costs. As mentioned before, this high cost of data collection will frequently limit the practicability and usefulness of any assessment tool. However, in those cases where an objective rating of the goodness of the student's decision is necessary, this type of a structured interview approach should be the method of choice.

Summary

The findings and conclusions of this study place the deaf educator who is interested in career educational assessment between a rock and a hard place. Clearly, the assessment of students' career related knowledge and the quality of their career decisions is an important part in successful career educational program development, implementation, and evaluation. The evidence presented here suggests that commercially available tests are not very useful in obtaining this kind of information. More useful information can be obtained by using self developed tests or a structured interview technique, but either of these approaches requires substantial time and effort to develop and refine. Developing such measures is not just a matter of writing items on paper or talking with students. Careful attention must be given during the development and administration of such measures if they are to be reliable, valid and useful.

Consequently, the educator is placed in a position of deciding whether the need for information justifies the cost of development and collection. In those cases where it does, self developed tests of career knowledge or structured interviews are the best of presently available alternatives.

References

1. Bell, T. H. and Hoyt, K. B. Career Education: The USOE Perspective (Occasional Paper No. 4). Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1974.

2. Bishop, M. E. and Clarcq, J. R. NTID's Career Development Model. Rochester, New York: National Technical Institute for the Deaf, 1977.

3. Hoyt, K. B. Evaluation of Career Education: Implications for Instruction at the Elementary School Level. Journal of Career Education, Spring, 1975, 1 (4), 69-79.

4. Magnusson, D. Test Theory. Reading, Massachusetts: Addison-Wesley Publishing, 1967.

5. Nelson, L. R. Guide to LERTAP Use and Interpretation. Dunedin, New Zealand: Department of Education, University of Otago, 1974.

6. Schein, J. D. and Delk, M. T. Jr. The Deaf Population of the United States. Silver Spring, Maryland: National Association of the Deaf, 1974.

7. Stahler, A. Underemployment. In R. L. Jones and K. Stevenson (Eds.) The Deaf Man and the World. Council of Organizations Serving the Deaf, National Forum II, 1969. pp. 33-40.

8. U. S. Office of Education. An Introduction to Career Education: A Policy of the United States Office of Education. (DHEW Publication No. (OE) 75-00504. Washington, D.C.: U. S. Government Printing Office, 1975.

9. White, K. R. Determining the Soundness of Career Decisions: A Structured Interview Approach. Department of Research and Development Paper Series, Rochester, New York: National Technical Institute for the Deaf, 1978.

10. Williams, B. R. and Sussman, A. E. Social and Psychological Problems of Deaf People. In A. E. Sussman and L. G. Steward (Eds.) Counseling With Deaf People. New York: Deafness and Research Training Center, New York University, 1971.

Appendix A

This appendix contains samples of items from each of the paper and pencil tests used in the study. In order to conserve space these items are typed in a more condensed format than the way they were administered. The main purpose is to give the reader a feeling for the kinds of items included in each test.

ASSESSMENT OF CAREER DEVELOPMENT: CAREER KNOWLEDGE SUBTEST

16. Biology and chemistry courses would probably be most helpful to a student thinking about becoming a _____.

_____ a) meat cutter
_____ b) tailor
_____ c) jeweler
_____ d) dietician

18. A _____ helps physically disabled people return to work.

_____ a) medical technologist
_____ b) rehabilitation counselor
_____ c) clinical psychologist
_____ d) physiologist

42. T F Only students who want to transfer to four-year colleges can sign up for programs at two-year community colleges.

75. In ten years _____

_____ a) most jobs will require four or more years of college
_____ b) there will be fewer jobs for unskilled workers
_____ c) there will be more jobs for high school dropouts than there are now
_____ d) there will be fewer jobs for technical workers

CAREER DEVELOPMENT INVENTORY: CAREER KNOWLEDGE SUBTEST

3. A _____ supervises other workers

_____ 1) Machinist
_____ 2) Mechanic
_____ 3) Millwright
_____ 4) Tool and die maker
_____ 5) Lathe operator

8. Dental technicians usually learn their jobs in _____.

_____ 1) high schools
_____ 2) apprenticeships or on-the-job training
_____ 3) community colleges or technical schools
_____ 4) four-year colleges or universities
_____ 5) graduate professional schools

18. Bookkeepers use _____ in their jobs.

_____ 1) lathes
_____ 2) calculators
_____ 3) ledgers
_____ 4) slide rules
_____ 5) copiers

46. Allan is very good with skilled handwork and is the best in his class in art and mechanical things. His best grades are in math. Allan likes all of these things. The best thing for Allan is to _____.

_____ a) look for a job which uses as many of these interests and abilities as possible
_____ b) pick a job which uses math because there is a better future in that than in art or in working with one's hands
_____ c) decide now on one of these activities because of ability or interest, and then pick a job which uses that kind of asset
_____ d) wait until he loses interest in some of these activities and then decide

CAREER DEVELOPMENT INVENTORY: PRIOR PLANNING/EXPERIENCE SUBTEST

19. Finding out about educational and job possibilities by going to the library, sending away for information, or talking to someone who knows about the possibilities. I have done _____

_____ a) no thinking or planning
_____ b) a little bit of thinking or planning
_____ c) some thinking or planning
_____ d) a lot of thinking or planning

ASSESSMENT OF CAREER DEVELOPMENT: PRIOR PLANNING/EXPERIENCES SUBTESTS (cont.)

I have done this activity:	never	once	several times
52. Talked with an adult (not in my family) about how he chose his job.....	_____	_____	_____
69. Started a hobby or joined a group or club that was related to a job I was thinking about.	_____	_____	_____
95. I have talked with workers in the jobs in my major about how they chose that job.....	_____	_____	_____

NEW MEXICO TEST SERIES: CAREER KNOWLEDGE SUBTEST

5. John removed the covering, webbing, and padding from the seat by using a tack puller, chisel and mallet. He cut the cords which held the broken springs in place, inserted new springs and retied them. Then he measured and cut new covering material. John is _____.

_____ a) an office equipment repairman
_____ b) an interior decorator
_____ c) an upholsterer
_____ d) a mechanic

17. In which group does #1 require the most training and education and #3 the least training and education?

_____ a) 1) draftsman, 2) engineer, 3) laboratory technician
_____ b) 1) laboratory technician, 2) engineer, 3) draftsman
_____ c) 1) laboratory technician, 2) draftsman, 3) engineer
_____ d) 1) engineer, 2) laboratory technician, 3) draftsman

NEW MEXICO TEST SERIES: PRIOR PLANNING/EXPERIENCES SUBTEST

During the past year, I have:

45. YES NO decided how many more years I want to stay in school before getting a full-time job

46. YES NO learned the salaries of jobs in which I am interested

28. Choosing school courses. I spend _____ than most other NTID students.

_____ a) a lot less time and thought
_____ b) a little less time and thought
_____ c) about the same amount of time and thought
_____ d) a little more time and thought
_____ e) a lot more time and thought

34. The abilities and skills needed for the job. I know _____

_____ a) almost nothing about it
_____ b) a little bit about it
_____ c) some about it
_____ d) a lot about it

CAREER MATURITY INVENTORY: SELF APPRAISAL SUBTEST

2. Duane does a lot of wood shop work at home and takes shop courses at school. He has made several professional-looking cabinets and has won a prize in a contest. He is now trying to decide if he has enough skill to continue with cabinetmaking. What do you think?

A. The work he has done shows that he has above average skill in cabinetmaking skill and interests.

B. If his friends think he has cabinetmaking skill, he probably does and should continue making cabinets.

C. He should plan carefully because he may not have enough skill to be a successful cabinetmaker later in his life.

D. He has skill in making cabinets, and he should also design them.

E. Don't know.

CAREER MATURITY INVENTORY: CHOOSING A JOB SUBTEST

41. Lisa has helped the school newspaper for the past three years. At first she wanted to report the news, but later she became interested in how a newspaper is printed. She went to work in a place where newspapers are printed and learned how pages are set, how the presses run, and many other things about producing a newspaper. Which job would be the best for her?

A. instrument assembler
B. printer
C. routeman
D. X-ray technician
E. don't know

CAREER MATURITY INVENTORY: PROBLEM SOLVING SUBTEST

81. John wants to be an engineer and has the skills to be one. But, his grades are poor, and he thinks he may not get into college. What should he do?

A. work harder and get better grades
B. talk with his teachers or a counselor
C. hope to get into college even though his grades were poor because he has the skills
D. choose another job that doesn't require college
E. don't know

NTID CAREER KNOWLEDGE TEST

16. A person with a bachelor degree (BA) in social work would probably _____.

a) teach courses at a university
b) work as a labor management arbitrator
c) be a vocational rehabilitation counselor
d) assist a psychiatrist by keeping charts and records of patients' progress

18. Color blindness would be the biggest problem in _____.

_____ a. medical records technology
_____ b. medical laboratory technology
_____ c. data processing
_____ d. manufacturing processes

21. An NTID graduate who surveys property boundaries probably majored in _____.

_____ a) architectural technology
_____ b) optical finishing
_____ c) civil technology
_____ d) data processing

45. T F Associate degree programs take longer than bachelor degree programs.

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